Vehicle Dynamic Control Strategy of Automated Driving

[For Safer and More Comfortable Automated Driving Technology]

Corporate Sponsored Research Programs

Dynamics and Control of Vehicle
Human-Machine Systems
Mechano-Informatic Mobility Engineering

Sponsored by
JTEKT Corporation

Vehicle Dynamic Control

Robust Control against Disturbance and Modeling Error

Vehicle stability control utilizing four-wheel independent braking/driving force control by in-wheel motors

Towards the Evolution of Automated Driving

Centaur
Unity with a car like extending four limbs

Rider and Horse
Driver
AD Vehicle
AD

Realization of Unity of Driver-Vehicle (Rider-Horse)

Lower Implementation Cost

Expand ODD
(Operational Design Domain)

Prevent Over-Trust in AD/ADAS

HMI Human-Machine Interface

HMI to Encourage Driver’s Spontaneous Behavioral Change

Driving simulator experiment

Environment and Driver Monitoring using Cameras and Biological Sensors

Vehicle Dynamic Function for Automated Driving (AD) fusing
- Human-Machine System
- AI and Other Advanced Technology

Better performance (precision, response) in AD control

More Reliability in AD
Affluent Society where People Can Move Safely in Peace

Academic Contribution

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